Relationship between scenery of flow ecology habitat and physical environment

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ABSTRACT: For the evaluation of the natural environment of the small river, generally is explained by physical factors such as flow velocity and water depth or scour/pool and riffle landscape classification. However, in small urban rivers, a quantitative study of how many are related to what extent environmental factors, such as shallow, riverbed materials and other physical environmental factors and the flow rate was classified from the perspective of the landscape has not yet been established. The authors are being conducted in collaboration with the Fukutsu city to cooperate with the river environment which is flowing in the Kamisaigo River, Fukuoka Prefecture. In order to evaluate this environmental restoration project, the present study was performed the basic relationships of habitat and the physical environment must be clearly and quantitatively. Here we provide a frame of evaluation: flow ecological habitat. Extracts from the reach of the five sections of flow ecology habitat of the river was done in the Kamisaigo River. The perspective of the landscape to reach, classified by the five local habitat stagnation, from the rapids/riffle, run, glide, scour/pool and slack/shallow, their habitat with a rope delimited. Habitat for each depth, flow velocity, bed material was measured at 50 m terrain. The results of habitat landscape are as follows; we create a diagram of the depth–velocity-substrate distribution, we were also founded relatively clear overlap between glide and pool for velocity and between glide and slack/shallow in depth. Physical quantities of slack/shallows and scour/pool in particular often overlap. Reynolds number as a-biotic environment was the best criterion for objectively classifying rapid/ riffle, run and glide respectively, also Froude number for the run, slack/shallow and scour/pool respectively. Research methods showed the effectiveness of a habitat relationship with environmental a landscape.

KEYWORDS: flow ecology habitat, physical environment, the perspective of landscape.

Proposed topic: (C) River Engineering and Restoration